Unit 201: Employment and employability in the Building Services Engineering sector

# Sample scheme of work

This sample scheme of work covers classroom-based learning for Unit 201. It is based on three hours per session for 10 sessions. It is an example of a possible scheme of work and is based on theory and practical within a further education (FE) centre, but can be amended to suit all learning facilities with the necessary adjustments to meet individual learners’ needs.

**You can use the sample scheme of work as it is, adjust it or extract content to create a scheme of work to suit your delivery needs. It can also be adjusted by adding theory and practical workshops to support learners who have/need additional learning time.**

Reference is made within the scheme of work to **worksheets**, **questions and PowerPoint presentations** (in **black bold**) that are available for tutors to use with learners. Any other resources listed are not provided but give guidance for the tutor as to others they may produce. Delivery timings are given, however, these can be amended to suit the group. The content of presentations, discussions, explanations etc are left to the professionalism of the course tutor.

Centres should also incorporate the following themes, where appropriate, as strands running through each of the sections within the qualification. Although they are not specifically referred to in the content section, City & Guilds regards these as essential in the teaching of the qualification:

health and safety considerations, in particular the need to impress upon learners the fact that they must preserve the health and safety of others as well as themselves

essential skills (application of number, communication, digital literacy and employability)

extension tasks and differentiation, inclusion, entitlement and equality issues

spiritual, moral, social and cultural issues

environmental education and related European issues

British values

use of information learning technology (ILT).

Unit 201: Employment and employability in the building services engineering sector

# Sample scheme of work

**Course/qualification:** Progression Qualification in Building Services Engineering **Tutor’s name:** Enter the tutor’s name here

**Number of sessions**:10 **Delivery hours**: 30 **Venue**:Enter the venue here **Group**: Enter the group here

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| --- |
| **Learning outcomes**   * LO1 Know the trade relevant bodies and organisations within the building services engineering sector * LO2 Know the main principles of self-employment in the building services engineering sector * LO3 Know the importance of interpersonal and intrapersonal skills * LO4 Know how to solve problems within their scope of responsibility |

| Session | Objectives/learning outcomes **The learner will:** | Activities and resources | Skills check |
| --- | --- | --- | --- |
| 1  3 hours | 1. Know the trade relevant bodies and organisations within the building services engineering sector  Assessment criteria  1.1 The trade bodies and organisations relevant to the trade  1.2 The role of the relevant trade bodies and organisations | Activities:   * Ask learners to complete Worksheet 1 as an introduction to the unit and discuss the answers as a group. * Deliver PowerPoint 1 and facilitate a classroom discussion on the various trade bodies in the UK BSE sector and their role within industry. * Split learners into groups and direct them to use the internet to learn more about trade bodies, including specialist bodies. Assign one organisation per group. * Learners feedback to the class about their assigned body and the role they play. Facilitate a discussion around the differing roles played. * [ECA](http://www.eca.co.uk) * [JIB](http://www.jib.org.uk) * [Certsure](http://www.certsure.com) * [NICEIC](https://niceic.com) * [NAPIT](http://www.napit.org.uk) * [IET](http://www.theiet.org) * [CIBSE](http://www.cibse.org) * [APHC](https://aphc.co.uk/) * [HETAS](http://www.hetas.co.uk) * [OFTEC](http://www.oftec.org) * [Gas Safe](http://www.gassaferegister.co.uk) * [IGEM](http://www.igem.org.uk) * [CIPHE](http://www.ciphe.org.uk) * [BESA](http://www.thebesa.com) * Split the class into four groups and have them provide two lists on a flip chart: * advantages of professional bodies * disadvantages of professional bodies. * Facilitate a discussion around the pros and cons of trade unions in the BSE sector. * Distribute Worksheet 2 as a homework task for learners to complete before the next session.   Resources:   * **PowerPoint 1: The role of trade and professional bodies in the BSE sector** * **Worksheet 1: Professional bodies for trade professionals** * **Worksheet 2: The role of professional bodies** | **Worksheets 1, 2**  **Classroom discussion**  **Groupwork**  **Self and peer assessment**  **Open oral questioning** |
| 2–3  6 hours | 1. Know the trade relevant bodies and organisations within the building services engineering sector   Assessment criteria  1.3 The competence card schemes within the building services engineering sector and the types of cards available for the trade  1.4 Professional registration as an Engineering Technician | Activities:   * Recap the previous session by discussing Worksheet 2: The role of professional bodies in the BSE Sector, and facilitate a discussion around the content of the worksheet. * Split the class into two groups and ask learners to research and feedback to peers on the benefits of professional body engagement. * Deliver PowerPoint 2 and facilitate a classroom discussion on the role of the BESA and CIBSE, and the different card schemes. * Discuss the role of BESA, and watch the introductory video [BESA – An Introduction to the BESA Competence Assessment Standard (CAS) Audit – YouTube](https://www.youtube.com/watch?app=desktop&v=6lR90LcPVWQ&feature=youtu.be). * Use the links on the logos to examine the websites and demonstrate their roles within industry. * Watch the video [CIBSE – What does a career in building services engineering look like? – YouTube](https://www.youtube.com/watch?v=QUVmK2Ywp2I&list=PLfwboSivzDoy-_2sU--lbKXksgJag7n8n&index=2) and facilitate a discussion around the differences between craft/skilled operatives and the more technical and supervisory roles such as design engineer. * Use PowerPoint 2 to identify the two competency schemes and link to CSCS. Discuss the colours and types using the signposted links to the SKILLcard and ECS Card websites. * Watch the video that identifies how to apply for the ECS card: ECS – [Applying for your first ECS card? Help and Advice... – YouTube](https://www.youtube.com/watch?v=pf8wGfxblvU) and then ask learners to complete Worksheet 3 on the card schemes and pathways in BSE in relation to qualifications and related cards. * Use the following links to examine some of the CPD and membership offers from CIBSE, along with the publications used by BSE engineers from CIBSE and BESA: * [BESA Publications | Browse our Publications Listing & Prices (thebesa.com)](https://www.thebesa.com/besa-publications-listing-non-member) * [CIBSE Guides](https://www.cibse.org/knowledge-research/knowledge-resources/engineering-guidance/cibse-guides) * Learners complete Worksheet 4 on the importance of the role of the CIBSE and CPD. Learners peer assess worksheets. * Facilitate discussion with the class about the importance of CPD and how it can benefit tradespeople in the BSE industry. * Divide the class into groups of three. Provide each group with a list of CPD courses available in the construction and BSE industry. * Ask each group to select a CPD course and prepare a short presentation on why this course is important for tradespeople in the industry. * Each group should present their chosen CPD course to the class, highlighting the benefits and skills learned from the course. * After the presentations, hold a group discussion on the importance of CPD in the industry and the impact it can have on career development.   Resources:   * **PowerPoint 2: The BSE trade professional** * **Worksheet 3: ECS and SKILLcard cards scheme and pathways in BSE** * **Worksheet 4: Industry bodies and CPD within BSE** * Websites: * [About](http://www.skillcard.org.uk/about-skillcard) SKILLcard * [ES](http://www.ecscard.org.uk/) Card * [BESA](http://www.thebesa.com/besa-publications-listing-non-member) Publications * [CIBSE](http://www.cibse.org/knowledge-research/knowledge-resources/engineering-guidance/cibse-guides) Guides * YouTube: * [An Introduction to the BESA Competence Assessment Standard (CAS) Audit](https://www.youtube.com/watch?v=6lR90LcPVWQ) * What does a career in building services engineering look like? * [Applying for your first ECS card? Help and Advice..](http://www.youtube.com/watch?v=pf8wGfxblvU). | **Classroom discussion**  **Groupwork**  **Self and peer assessment**  **Open oral questioning**  **Worksheet 3**  **Worksheet 4** |
| 4  3 hours | 2. Know the main principles of self-employment in the building services engineering sector  Assessment criteria  2.1 The characteristics of self-employment  2.2 The advantages and disadvantages of self-employment | Activities:   * Recap previous session. * Deliver PowerPoint 3 and facilitate a classroom discussion on the characteristics of self-employment. * Watch the video Financial 247 – [Self-Employed vs Limited Company (UK) – What Is The Difference?](https://youtu.be/N0xDBq9yHzY) – YouTube. * Learners complete Worksheet 5 on differentiating between sole trader and limited company. * Facilitate discussion around the content of the worksheet. * Watch the video On The Tools – [How To Go Self Employed As A Tradesperson](https://www.youtube.com/watch?v=xV5C2uRfTRw) – YouTube. * Watch the video Lawrence Grant – [Pros and Cons of Being Self Employed](https://www.youtube.com/watch?v=aklaPlo0iik&feature=youtu.be) – YouTube. * Split the class into four groups and have them provide two lists on a flip chart: * advantages of being self-employment * disadvantages of being self-employment. * Learners complete Worksheet 6 on analysing self-employment. * Learners peer assess worksheets. * Facilitate a discussion around responses to Worksheet 6.   Resources:   * **PowerPoint 3: The characteristics of self-employment** * **Worksheet 5: Sole trader or limited company** * **Worksheet 6:** **Analysing self-employment** * Websites: * [Sole traders in the construction industry](http://www.designingbuildings.co.uk/wiki/Sole_traders_in_the_construction_industry) * Sole trader * [What](http://www.contractoruk.com/limited_companies/what-is-a-limited-company.html#:~:text=In%20the%20most%20basic%20sense,managers%20('directors')) is a limited company? * [Types of construction organisation](http://www.designingbuildings.co.uk/wiki/Types_of_construction_organisation) * The pros and cons of being self-employed * [Self-employment](https://researchbriefings.files.parliament.uk/documents/SN00196/SN00196.pdf) in the construction industry * [Construction and the self-employed?](https://app.croneri.co.uk/feature-articles/construction-and-self-employed?product=133) * YouTube: * [Self-Employed vs Limited Company (UK) – What Is The Difference?](https://www.youtube.com/watch?v=N0xDBq9yHzY&t=1s&pp=ygVCU2VsZi1FbXBsb3llZCB2cyBMaW1pdGVkIENvbXBhbnkgKFVLKSDigJMgV2hhdCBJcyBUaGUgRGlmZmVyZW5jZT8g) * [How To Go Self Employed As A Tradesperson](https://youtu.be/xV5C2uRfTRw) * [Pros and Cons of Being Self Employed](https://youtu.be/aklaPlo0iik) | **Classroom discussion**  **Groupwork**  **Self and peer assessment**  **Open oral questioning**  **Worksheet 5**  **Worksheet 6** |
| 5  3 hours | 2. Know the main principles of self-employment in the building services engineering sector  Assessment criteria  2.3 The responsibilities of being self-employed  2.4 Patterns in employment and rises and falls in demand: peaks and troughs in construction work, recruitment shortfall, skills shortage forecasts, trend predictions, vacancies | Activities:   * Recap previous session. * Learners carry out research on registering as self-employed with HMRC. * Facilitate discussion around record keeping for tax purposes and how to register for being self-employed. * Deliver PowerPoint 4 and facilitate a classroom discussion on self-employment and the economy. * Watch the video HMRC – [Tax Facts – Construction Industry Scheme](https://www.youtube.com/watch?v=v7mm2OABn4U&feature=youtu.be) – YouTube. * Discuss the term recession and watch the video on TED-Ed – [What causes an economic recession](https://youtu.be/SwaCg7Gwtzw) – YouTube. * Watch the video Sky News – [Builders says that surging costs are hitting them hard](https://youtu.be/8yDGH0VJmb8) – YouTube. * Watch the video Thames News – [Recession | Building industry | British Economy | Thames News | 1991](https://youtu.be/ZZ3wAtc3Bkg) – YouTube. * Follow the links to the [APHC](https://aphc.co.uk/news/the-rising-cost-of-materials-in-2022/) or [*Electrical Times*](https://www.electricaltimes.co.uk/rising-cost-of-raw-materials-is-the-biggest-challenge-for-electricians-and-homeowners-in-2022/) articles regarding rising cost of raw materials in the plumbing industry. * Facilitate discussion around who this affects and in what way. * Learners complete Worksheet 7 on self-employment and the economy. * Learners peer assess worksheets. * Facilitate discussion around responses to Worksheet 7. * Use PowerPoint 4 to discuss the current trends relating to BSE regarding output and the need for recruitment. * Share the link for learners to use the CITB Wales document before completing Task 6 on Worksheet 7 as a homework task. ([Construction](https://www.citb.co.uk/media/n15bpq0n/wales.pdf) Skills Network Labour Market Intelligence Report)   Resources:   * **PowerPoint 4: The economy and the BSE industry** * **Worksheet 7: Employment status and rises and falls in demand** * Websites: * [About us – HM Revenue and Customs](https://www.gov.uk/government/organisations/hm-revenue-customs/about) * [Set up as self-employed](http://www.gov.uk/set-up-self-employed) * [Recession casualties: Britain's construction industry counts cost of boom-and-bust](https://www.telegraph.co.uk/finance/recession/5568068/Recession-casualties-of-Britains-construction-industry-count-cost-of-boom-and-bust.html) * The rising cost of materials in 2022 * Rising cost of raw materials is the biggest challenge for electricians and homeowners in 2022 * [Business Cycles, Recessions and Economic Booms](http://www.zen40585.zen.co.uk/Business%20cycles%20recessions%20and%20economic%20booms.pdf) * Construction Skills Network Labour Market Intelligence Report * YouTube: * [Tax Facts – Construction Industry Scheme](https://youtu.be/v7mm2OABn4U) * [What causes an economic recession?](https://youtu.be/SwaCg7Gwtzw) * [Builders says that surging costs are hitting them hard](https://youtu.be/8yDGH0VJmb8) * [Recession | Building industry | British Economy | Thames News | 1991](https://youtu.be/ZZ3wAtc3Bkg) | **Classroom discussion**  **Groupwork**  **Self and peer assessment**  **Open oral questioning**  **Worksheet 7** |
| 6  3 hours | 2. Know the main principles of self-employment in the building services engineering sector  Assessment criteria  2.4 Patterns in employment and rises and falls in demand  2.5 The duty of care in ensuring products and work are safe for end users | Activities:   * Recap previous session and discuss Task 6 of Worksheet 7. Discuss the findings as a group and peer mark worksheets. * Learners define their understanding of ‘duty of care’ under current health and safety law. * Facilitate a short discussion around the topic. * Deliver PowerPoint 5 and facilitate discussion around duty of care and reporting procedures to ensure compliance. * Learners peer assess worksheets. * Facilitate discussion around responses to Worksheet 8.   Resources:   * **PowerPoint 5: Duty of care** * **Worksheet 8: Duty of care** * Websites: * [HSE Information about health and safety at work](https://www.hse.gov.uk/) * [HSE Duty of Care](https://www.hse.gov.uk/workers/employers.htm#:~:text=It%20is%20an%20employer's%20duty,reasonably%20practicable%20to%20achieve%20this.) * [HSE Managing health and safety](https://www.hse.gov.uk/managing/index.htm) * YouTube: * [The basics of Construction (Design and Management) Regulations 2015](https://youtu.be/V1jLyWTscjs) | **Classroom group discussion**  **Peer assessment**  **Worksheet 7**  **Worksheet 8** |
| 7–8  6 hours | 3. Know the importance of interpersonal and intrapersonal skills  Assessment criteria  3.1 The importance of effective and appropriate communication with others  3.2 The importance of emotional intelligence in effective communication | Activities:   * Recap previous session. * Learners to identify all the different forms of communication on site and discuss pros and cons of each one. * Deliver PowerPoint 6 and facilitate discussion around communication and emotional intelligence. * Watch the video The Random Voices – [Communication Problems](https://www.youtube.com/watch?v=dBT6u0FyKnc&feature=youtu.be) – YouTube and discuss the impact of poor communication. * Watch the video MindToolsVideos – [Emotional Intelligence in the Workplace](https://www.youtube.com/watch?v=hlfPjCviTxA&feature=youtu.be) – YouTube and facilitate discussion on how this can be an effective tool in aiding effective communication. * Learners complete Worksheet 9 on effective communication and emotional intelligence. * Watch the video BCTG Construct – [Equality and Diversity in Construction Case Study](https://www.youtube.com/watch?v=IRRA6n9ul44) – YouTube. * Split the class into groups and have them provide two lists on a flip chart: * the protected characteristics under the Equality Act * the benefits of a diverse and inclusive workforce in the BSE industry. * Facilitate discussion around the role of protected characteristics as well the benefits of inclusion and diversity in the BSE industry. * Learners complete Worksheet 10. * Facilitate a discussion around the promotion and importance of equality and diversity. * Learners peer assess worksheets. * Facilitate discussion around responses to Worksheet 10.   Resources:   * **PowerPoint 6: Effective inclusive communication** * **Worksheet 9: Effective communication and emotional intelligence** * **Worksheet 10:** **Equality and diversity in the BSE industry** * Websites: * [A Journey to A More Equal Wales](http://www.futuregenerations.wales/wp-content/uploads/2019/11/FINAL-Equality-Wales-Topic-3.pdf) * [Why Is Diversity & Inclusion in the Workplace Important?](https://www.greatplacetowork.com/resources/blog/why-is-diversity-inclusion-in-the-workplace-important#:~:text=Diversity%20and%20inclusion%20are%20two,and%20integrated%20into%20an%20environment.) * [What is EQ? A Guide to Emotional Intelligence in the Workplace](https://www.highspeedtraining.co.uk/hub/emotional-intelligence-workplace/#:~:text=%20Benefits%20of%20Emotional%20Intelligence%20in%20the%20Workplace,positive%20about%20their%20work%20and%20their...%20More%20) * YouTube: * [Communication Problems](https://youtu.be/dBT6u0FyKnc) * [Emotional Intelligence in the Workplace](https://youtu.be/hlfPjCviTxA) * [Equality & Diversity in Construction Case Study](https://youtu.be/IRRA6n9ul44) * [Diversity: Workplace Benefits of Equality and Inclusion](https://youtu.be/_tGjgRwgAeo) | **Classroom discussion**  **Groupwork**  **Self and peer assessment**  **Open oral questioning**  **Worksheet 9**  **Worksheet 10** |
| 9  3 hours | 3. Know the importance of interpersonal and intrapersonal skills  Assessment criteria  3.3 How to plan and manage one’s own time  3.4 How to set targets and success criteria  3.5 The importance of reflective practice | Activities:   * Recap previous session. * Deliver PowerPoint 7 and facilitate discussion around planning for successful outcomes. * Learners complete Worksheet 11. * Facilitate discussion around planning for successful outcomes. * Learners peer assess worksheets. * Facilitate a discussion around responses to Worksheet 11.   Resources:   * **PowerPoint 7: Planning for successful outcomes and reflective practice** * **Worksheet 11: Solution-driven problem-solving** * Websites: * [Planning for construction work](http://www.hse.gov.uk/construction/safetytopics/planning.htm) * Managing construction projects * What are Kolb’s learning styles? * [What is Success Criteria?](https://www.twinkl.co.uk/teaching-wiki/success-criteria) * [Interpersonal vs Intrapersonal: Keys to Communicate](https://www.uopeople.edu/blog/interpersonal-vs-intrapersonal/) * YouTube: * [Interpersonal and Intrapersonal Communication](https://youtu.be/CVgTs9eWoik) * [Interpersonal and intrapersonal relationships](https://youtu.be/q-Su2ecYJnc) * [Benefits of Planning](https://youtu.be/6ssVNBTKnfo) * [Reflective Practice](https://youtu.be/y7jCmfIy7jk) | **Classroom discussion**  **Groupwork**  **Self and peer assessment**  **Open oral questioning**  **Worksheet 11** |
| 10  3 hours | 4. Know how to solve problems within their scope of responsibility  Assessment criteria  4.1 Recognise problems that may occur within building services projects  4.2 How to identify solutions to problems  4.3 How to test and evaluate solutions | Activities:   * Recap previous session. * Deliver PowerPoint 8 and facilitate a discussion around problems faced in the BSE industry and how to overcome them. * Lead a roleplay. Learners to work in small groups or pairs to invent a conceivable problem on a project before discussing ideas as a group on how these problems could be overcome. * Learners complete Worksheet 12, Tasks 1–2. * Facilitate discussion around effective problem-solving and scope of responsibility. * Learners complete Worksheet 12: Task 3. * Learners peer assess worksheets. * Review outcomes to identify key areas for targeted exam revision.   Resources:   * **PowerPoint presentation 8: Effective problem-solving** * **Worksheet 12:** **Solution-driven problem-solving and scope of responsibility** * **Multiple choice summative quiz** * Websites: * [What is problem-solving?](https://asq.org/quality-resources/problem-solving#:~:text=Problem%20solving%20is%20the%20act,solution%3B%20and%20implementing%20a%20solution) * [How to encourage problem-solving in your construction workforce?](http://www.nccer.org/news-research/newsroom/blogpost/breaking-ground-the-nccer-blog/2021/03/04/how-to-encourage-problem-solving-in-your-construction-workforce#:~:text=It's%20the%20process%20involved%20in,ultimately%20better%20service%20for%20customers) * [7 steps to improve your problem-solving skills?](https://trainingexpress.org.uk/7-steps-to-improve-your-problem-solving-skills/) | **Classroom discussion**  **Groupwork**  **Self and peer assessment**  **Open oral questioning**  **Worksheet 12**  **Multiple choice summative quiz** |